

Amendment to the Claims

Claim 1 -22 (Canceled)

23. (Previously presented) A process for treating waste water which is highly loaded with ammonium at a level of at least about 200 mg/liter comprising treating the waste water with nitrifying microorganisms in the presence of suspended silicate carrier substance, wherein the silicate carrier substance has a specific surface area greater than about 20 m²/g, wherein the silicate carrier substance has a swelling volume of about 5 to about 80 ml/2g, wherein the silicate carrier substance acts as a carrier for the nitrifying microorganisms and wherein the silicate carrier substance with the nitrifying microorganisms is suspended in the waste water.

24. (Previously presented) The process of Claim 23, wherein the specific surface area of the silicate carrier substance is greater than about 50 m²/g.

25. (Previously presented) The process of Claim 23, wherein at least 95 percent of the silicate carrier substance has a particle size less than about 150 μ m.

26. (Previously presented) The process of Claim 23, wherein the waste water has an ammonium / nitrogen content of about 200 to 2000 mg/liter.

27. (Previously presented) The process of Claim 23, wherein the waste water has an ammonium / nitrogen content of about 400 to 1600 mg/liter.

28. (Previously presented) The process of Claim 23, wherein the waste water is selected from the group consisting of municipal waste waters, flow from a sludge treatment plant, supernatant water from sludge digestion and waste dump leakage water and mixtures thereof.

29. (Previously presented) The process of Claim 23, further comprising impregnating the silicate carrier substance with the nitrifying microorganisms prior to its addition to the waste water.

30. (Previously presented) The process according to Claim 23, wherein a denitrifying process is carried out under anoxic conditions.

31. (Previously presented) The process of Claim 23, wherein the silicate carrier substance comprises about 5 to 50 grams per liter of the waste water.

32. (Previously presented) The process according to Claim 23, wherein the silicate carrier substance has a surface pH of about 6 to 9.

33. (Previously presented) The process of Claim 23, wherein the silicate carrier substance comprises a clay mineral.

34. (Previously presented) The process of Claim 33,

wherein the clay mineral comprises a smectite clay.

35. (Previously presented) The process of Claim 23, wherein during treatment with the nitrifying microorganisms, the pH value of the waste water is adjusted to about 6.5 to about 8.5 by the addition of an alkali material.

36. (Previously presented) The process of Claim 23, wherein the amount of the silicate carrier substance added to the waste water is from about 6 to about 15 kg per kg of nitrogen in the waste water.

37. (Previously presented) The process of Claim 23, wherein the nitrification is carried out under aerobic conditions.

38. (Previously presented) The process of Claim 23 further comprising nitrifying the waste water by introducing an oxygen-containing gas to the waste water.

39. (Previously presented) The process of Claim 38, wherein the oxygen content of the waste water is adjusted to be at least about 2 mg per liter of waste water.

40. (Previously presented) The process of Claim 23, further comprising adjusting the nitrogen content of the waste water to a volumetric loading of about 0.5 to about 2.5 kg of ammonium nitrogen per m³ waste water.

41. (Previously presented) The process of Claim 23, further comprising reducing the Chemical Oxygen Demand level

from at least about 300 to about 100 mg/liter before nitrification.

42. (Previously presented) The process of Claim 23, wherein the NH_4 / nitrogen content is limited to a maximum value of about 1200 mg/liter before nitrification.

43. (Previously presented) The process of Claim 23, wherein the nitrifying microorganisms comprise ammonium-oxidizing bacteria.

44. (Previously presented) The process of Claim 29, wherein a source for the nitrifying microorganisms comprises a carbon-based product.

45. (Previously presented) The process of Claim 33, wherein the clay mineral comprises a bentonite clay.

46. (Previously presented) The process of Claim 23 wherein the silicate carrier substance has a cation exchange capacity (CEC) of about 40 to 100 mVal/100 g.

47. (Previously presented) The process of Claim 23 wherein the silicate carrier substance has a cation exchange capacity (CEC) of about 50 to 80 mVal/100 g.

48. (Previously presented) The process of Claim 23 wherein the swelling volume of the silicate carrier substance is from about 10 to about 20 ml/2g.

49. (Previously presented) The process of Claim 23 further comprising denitrifying the waste water with

denitrifying microorganisms.

Claim 50 - 54 (Canceled)